Checklist review today:

Transaction

* an action, or a series of actions, carried out by a single user or an application program
* Follow ACID
  + Atomicity
    - all transactions are atomic
    - can’t be executed partially
    - commit or rollback
  + Consistency
    - transactions take the database from one consistent state to another state
  + Isolation
    - a transaction is not visible to other transactions until it completes
  + Durability
    - once a transaction has completed, its changes are made permanent

CAP

* + Consistency: all clients always have the same view of data
  + Availability: each client can always read and write
  + Partition Tolerance: the system works despite physical network partitions
  + CP: redis, MongoDB
  + AP: Cassandra
  + CAP: none

index

* optimize the performance of query (min # of I/O)
* as data structure
  + B+ tree (default)
    - O(n) -> O(logn)
  + bitmap
  + hashtable
  + r tree …
* clustered index - primary index
  + only one clustered index per table
  + defines the order in which data is physically stored
* non-clustered index - secondary index
  + as many as non-cluster index
  + doesn’t sort the physical data inside the table

New things learned today:

* Waterfall
  + traditional model
  + one phase needs to be reviewed and verified before moving to the next phase
* Agile
  + focuses more on people, results, collaboration, and flexible responses to change
  + breaks down the development process in sprints (1~2weeks)
  + info board (KANBAN/Pivotal/JIRA)
    - tickets for different points
* CI/CD (Continuous Integration/ Continuous Deployment)
  + CI – build -> test -> merge
    - compile -> tests (unit test, quality code, …)
  + CD - build -> test -> merge -> deploy (automagical)
    - deploy to server (dev environment, prod environment…)
* Travis CI
  + CI/CD tool
  + build and test software projects hosted on GitHub
  + travis.yml to config

Learned Plan tomorrow:

* Review Collection (big topic)
  + List
  + Set
  + Deque
  + Map